REMARKS

Claims 1-13 and 16 are pending in the application. The status of the claims is as follows:

Claims	Status
1, 2, 4-13, 16	Rejected
3	Allowable subject matter

The rejected claims / sections were rejected as follows:

Claims / Section	35 U.S.C. Sec.	References / Notes
1, 2, 4-13, 16	§103(a) Obviousness	○ Johnson, et al. (U.S. Patent No. 6,301,582).

Applicants thank the Examiner for indicating that claim 3 contains allowable subject matter.

Applicants have amended claims 1 and 4 to indicate that the storage areas are storage units and to clarify the relationship of the data that is stored in these units. Applicants have further provided discussion distinguishing claim 1 and the remaining dependent claims of the present invention from Johnson.

35 U.S.C. §103(a), Claims 1, 2, 4-13, 16 Obviousness over Johnson '582

1. Johnson does not teach a permanent memory having at least two storage units, but rather teaches a memory using a file manager and a virtual memory system, the latter being a temporary memory.

In the Office Action, p. 3, section 6, the Examiner indicates that Johnson discloses a database for storing persistent data as a two-level storage system of persistent data (2/17-18) and having " 'a permanent memory connected to the buffer, the permanent memory having at least two storage areas in each of which all permanent data from the buffer is stored' as a means wherein the TLS system for

storing persistent objects using to [sic: the] storage file manager and a virtual memory (2/2-10).

Applicants understand the Examiner to be equating Johnson's two systems having a file manager and a virtual memory system (2/4-5) with the present invention's permanent memory having at least two storage units into which persistent data is alternately written.

Applicants respectfully assert that this comparison is not valid because the virtual memory system of Johnson is a *temporary* memory, and not a *permanent* memory, as required by the present invention. According to the Webster's New World Dictionary of Computer Terms (8th Ed., Bryan Pfaffenberger, Ed, ISBN: 0-02-863777-1, 2000), virtual memory is "a method of extending the apparent size of random access memory (RAM) by using part of the hard disk as an extension of RAM" (p. 562). Webster's further describes the utilization of RAM by programs as follows: "Most programs set aside a portion of RAM as a *temporary workspace* for your data so that you can modify (rewrite) as needed until the data is ready for printing or storage on secondary storage media, such as a hard or floppy disk. RAM doesn't retain its contents when the power to the computer is switched off..." (p. 451, emphasis added).

Although according to these definitions the virtual memory represents RAM memory written to disk, Applicants respectfully contend that it is still temporary memory in the sense of the invention because it cannot be used to permanently store persistent configuration data and making a complete configuration available for later use. Virtual memory is used to extent a computer system's RAM—see Webster's definition of virtual memory management, p. 562, "virtual memory management ... [is used] with the result that memory extends seamlessly from random access memory (RAM) to the computer's secondary storage". The fact that data stored in virtual memory may be temporarily

written to a hard disk (a permanent storage medium) is not what is critical; what is critical is how this virtual memory is used—its use is what that dictates whether it is permanent or not, not the medium it is stored on.

It is well known in the art that when a computer is powered off and powered on again, virtual memory is lost and the disk space allocated to it previously is reused. Thus, a data element stored in virtual memory does not survive a power-off, power-on cycle and must be considered temporary in the sense of the present invention. The present invention addresses the storage of permanent configuration data in memory about a computer configuration—it would be of little value to store configuration data related to a computer in a storage area that is cleared every time the computer is powered off and on. Johnson thus teaches away from the present invention in that it utilizes a temporary data store in the form of a virtual memory.

Therefore, claim Johnson does not teach a permanent memory having at least two storage units as required by claim 1 of the present invention.

2. Johnson does not teach a permanent memory having at least two storage units into which persistent configuration data is alternately written, but rather teaches moving data into a temporary "memory buffer", and only upon demand of a requesting process.

In the Office Action, pp. 4-5, carryover paragraph, the Examiner indicates that Johnson discloses the alternate storage of data into two permanent memory storage units at 2/18-24. While this section of Johnson does indicate that persistent objects are stored by the file manager in a permanent storage medium (files on a disk), these persistent objects, according to Johnson, are not alternately written to storage units of a permanent memory.

In this cited section of Johnson, persistent object data is moved from a file on the backing store into a memory buffer. This memory buffer of Johnson is not permanent memory, but rather is working (temporary) memory that is used by a process. Hence, the movement in Johnson occurs between a permanent memory and a temporary memory.

Furthermore, the data is not *alternately* written between two storage units as required by the present invention, but rather is transferred upon request. Johnson, at 2/20-23 states, "When a process needs to access a persistent object, the process must contact the file manager which locates the persistent object in a file on the backing store and move a copy of the persistent object data into a memory buffer." This description in Johnson, while not ruling out such an alternative writing, certainly does not teach or suggest an alternate writing to two buffer stores. A process could request access to a persistent object stored on the file system multiple times before such an object is written to the file system. Alternatively, the object could be updated on the file system multiple times before access to it was ever needed by a process. Thus rather than a memory 1 (M1) write, memory 2(M2) write, M1 write, M2 write as required by the present invention, Johnson teaches the possibility of e.g., M1, M1, M2, M1 (or even M1, M1, M1, without an M2 write). Thus there is no teaching in Johnson that *requires* an alternate M1, M2, M1, M2 write, as required by the present invention, nor would it make sense for Johnson to require such alternative writes. The advantage to this alternate write scheme provided by the present invention is that, according to the exemplary embodiment provided in the specification at p. 4, last paragraph, "The use of two FEPROM chips or two storage areas of a [sic: an] FEPROM store into which all necessary data are written alternately offers decisive advantages for restarting the system. In the case of an error during the write process (due to a power failure in the

worst case), the previously valid complete data record is available in the other storage area." Johnson does not provide such a teaching—in the event of a power failure during either of the Johnson writes, the data would be corrupted. A power failure during the file system write would corrupt the data so that it could not be read in properly when the system is restarted, and a power failure during the memory buffer write would also corrupt the data (in the memory buffer) when it is written so that it could not be used. Thus, Johnson fails to teach or suggest that persistent data is *alternately* written to storage units of a permanent memory, as required by the present invention.

Applicants rely on the above arguments in asserting the nonobviousness of all remaining claims in the application.

For these reasons, Applicants assert that the claim language clearly distinguishes over the prior art, and respectfully request that the Examiner withdraw the §103(a) rejection from the present application.

CONCLUSION

Inasmuch as each of the rejections have been overcome by the amendments and arguments presented, and all of the Examiner's suggestions and requirements have been satisfied, it is respectfully requested that the present application be reconsidered, the rejections be withdrawn and that this application be passed to issue.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on February 22, 2002.

Mark Bergner Attorney for Applicants

APPENDIX A
CLAIM MARK UPS

1. (Twice amended) A data base for storing persistent data, comprising:

a buffer into which is written persistent data to be permanently stored;

a permanent memory connected to the buffer, the permanent memory having at least two storage units [areas], into which the persistent data is alternately written, each storage unit [area] being structured to store a complete permanent configuration for at least one of:

a) functions,

b) characteristics [of a terminal] and,

c) a hardware implementation,

of a terminal or cards of the terminal,

at least one of the permanent configurations stored having a complete configuration available and being selected for hardware implementation.

3. (Twice amended) A data base for storing persistent data, comprising:

a buffer into which is written persistent data to be permanently stored;

a permanent memory connected to the buffer, the permanent memory having at least two storage areas, into which the persistent data is alternately written, each storage area being structured to store a complete permanent configuration for at least one of: a) functions, b) characteristics of a terminal and, c) cards of the terminal, at least one of the permanent configurations stored having a complete configuration available and being selected for hardware implementation;

wherein the data base further comprises a control mechanism within a first application process for management of a first memory controls writing of the data to be persistently stored into the buffer, the data being generated or modified by the first

application process alone or also by other application processes running simultaneously with the first application process; and

[3. (Amended) The data base according to claim 2,] wherein for a number of application processes running simultaneously, a control mechanism within the first application process, by exchanging messages with control mechanisms of the other application processes, controls accesses, required for loading the data to be persistently stored, of individual application processes running simultaneously, to the buffer using process identification numbers, entered in a shared memory, of the application processes running simultaneously.

4. (Twice amended) The data base according to claim 1, wherein all of the persistent data stored in the buffer is alternately written into one of the storage units [or storage areas] of the permanent memory.

APPENDIX B
REFERENCES CITED

WEBSTER'S NEW WORLD™

DICTIONARY of COMPUTER TERMS

EIGHTH EDITION

By Bryan Pfaffenberger, Ph.D.

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Introduction

We live in a computerized society—and, increasingly, knowledge of computer terminology paves the way to personal and professional advancement.

- Commerce on the Internet is now estimated to make a contribution in excess of $300 billion annually to the U.S. economy. If you want to be part of this, you'll need to know why *strong authentication* is necessary, how to tell the difference between a *digital signature* and a *certificate*, and why *cookies* are needed to implement virtual *shopping carts*.
- Computer knowledge and expertise bring big payoffs in the job market. In today's job market, though, yesterday's computer skills won't pay off. You'll be wise to know the difference between *Java* and *Javascript*, why *virtual private networks (VPN)* are replacing *leased lines*, and whether *ActiveX* or *JavaBeans* represents the best choice for adding active content to a Web page.
- Currently, the Internet is available in an estimated 50 percent of U.S. households. A major impetus is electronic mail, which is increasingly a favorite method of staying in touch. Unless you want to be left in the dark, you'll be wise to know what people are talking about when they begin that litany of acronyms: *S/MIME*, *POP*, *IMAP*, *X.509*, *LDAP*, and many more.
- Buying a computer is your ticket to better performance in school and a better job after graduation. If you're thinking about purchasing a computer, or upgrading an existing one, you'll need to choose between such obscure things as *EDO RAM* and *SDRAM*, a *G4* and a *Pentium III*, and—if you want an *SCSI* device—whether you need *Fast SCSI*, *Wide SCSI*, or *Ultra Wide SCSI*. If your head's spinning, welcome to the club.

This book can help. Offering thousands of definitions in every area of computer and Internet technology, this book defines terms in clear, plain English. What's more, it goes beyond merely defining the terms; you'll find additional background information that will prove invaluable in understanding *why* a particular term is important and *how* it relates to others. For example, the

RAD Acronym for rapid application development. In object-oriented programming, a method of program development in which a programmer works with a library of pre-built objects, allowing him to build programs much more quickly.

radio button In a graphical user interface (GUI), the round option buttons that appear in dialog boxes. Unlike check boxes, radio buttons are mutually exclusive; you can pick only one radio button option within a group.

radio frequency interference (RFI) The radio noise generated by computers and other electronic and electromechanical devices. Excessive RFI generated by computers can disrupt the reception of radio and television signals. See *FCC certification.*

RAID Acronym for Redundant Array of Inexpensive Disks or Redundant Array of Independent Disks. A group of hard disks under the control of array management software that work together to improve performance and decrease the odds of losing data due to mechanical or electronic failure by using such techniques as data striping. Because of their complexity and steep cost, RAID implementations are most often used on network servers. Several RAID levels exist, each with advantages and disadvantages. RAID arrays are generally used for high-volume servers.

RAM See *random access memory.*

RAM cache See *cache memory.*

RAMDAC Acronym for random access memory digital-to-analog converter. A chip in the video adapter that converts three digital signals (one for each primary color) into one analog signal that is sent to the monitor. RAMDACs use on-board random access memory (RAM) to store information before processing it.

RAM disk An area of random access memory (RAM) configured by a utility program to emulate a hard disk drive. Data stored in a RAM disk can be accessed more quickly than data

stored on a disk drive, but this data is erased whenever you turn off or reboot the computer. See *configuration file, device driver,* and *RAMDRIVE.SYS.*

RAMDRIVE.SYS In MS-DOS, a configuration file provided with the operating system that sets aside part of your computer's random access memory (RAM) as a RAM disk, which is treated by MS-DOS as though it were a hard disk drive. RAMDRIVE.SYS is a device driver that must be loaded using a DEVICE or DEVICEHIGH statement in your CONFIG.SYS file.

random access An information storage and retrieval technique in which the computer can access information directly, without having to go through a sequence of locations. A better term is direct access, but the term "random" access has become enshrined in the acronym random access memory (RAM). To understand the distinction between random and sequential access, compare a cassette tape (sequential access) with a vinyl record (random access).

random access memory (RAM) The computer's primary working memory, in which program instructions and data are stored so that they can be accessed directly by the central processing unit (CPU) via the processor's high-speed external data bus. RAM often is called read/write memory to distinguish it from read-only memory (ROM), the other component of a personal computer's primary storage. In RAM, the CPU can write and read data. Most programs set aside a portion of RAM as a temporary workspace for your data so that you can modify (rewrite) as needed until the data is ready for printing or storage on secondary storage media, such as a hard or floppy disk. RAM doesn't retain its contents when the power to the computer is switched off, so save your work frequently.

Random access memory digital-to-analog converter See *RAMDAC.*

range In a spreadsheet program, a cell or a rectangular group of adjacent cells. Valid ranges include a single cell, part of a column, part of a row, and a block spanning several columns and several rows. Ranges allow you to perform operations, such as formatting, on groups of cells. See *range expression* and *range name.*

machines can also access the keyboard, printer, and other devices without conflicts. Virtual machines are made possible by a computer with the necessary processing circuitry and a lot of random access memory (RAM). See *Virtual 8086 mode*. **2.** In Java, a protected memory space in which a Java applet can execute safely, without any access to the computer's file system. Synonymous with *sandbox*.

virtual memory A method of extending the apparent size of random access memory (RAM) by using part of the hard disk as an extension of RAM. Many application programs, such as Microsoft Word, routinely use the disk instead of memory to store some data or program instructions while you're running the program. See *virtual memory management*.

virtual memory management The management of virtual memory operations at the operating system level rather than the application program level. An advantage to implementing virtual memory at the operating system level rather than the application level is that any program can take advantage of the virtual memory, with the result that memory extends seamlessly from random access memory (RAM) to the computer's secondary storage. Microsoft Windows 95/98 can take full advantage of the virtual memory capabilities of virtual memory. In the Macintosh world, Apple's System 7.5 makes virtual memory management available for users of 68030-based Macintoshes.

virtual private network (VPN) A highly secure network for transmitting sensitive data (including electronic commerce transactions) that uses the public Internet as its transmission medium. To ensure data confidentiality and integrity, VPNs use encryption and protocol tunneling. See *PPTP*.

virtual reality (VR) A computer-generated illusion of three-dimensional space. On the Web, virtual reality sites enable Web users to explore three-dimensional virtual reality "worlds" by means of VR plug-in programs. These programs enable you to walk or fly through the three-dimensional space that these worlds offer. In advanced VR, the user wears a head-mounted display (HMD), which displays a stereoscopic image; and wears a sensor glove, which permits the user to manipulate objects in the virtual environment. See *cyberspace, electrocutaneous feedback, second-person virtual reality, sensor glove,* and *stereoscopy*.

Virtual Reality Modeling Language See *VRML*.

virus A program designed as a prank or as sabotage that replicates itself by attaching to other programs and carrying out unwanted and sometimes damaging operations. When viruses appear, the effects vary, ranging from prank messages to erratic system software performance or catastrophic erasure of all the information on a hard disk. Don't ever assume that a prank message means that's all the virus will do. See *antivirus program, Trojan horse,* and *vaccine*.

Visual BASIC A high-level programming language for developing applications designed to run in Microsoft Windows. Using Visual BASIC, the programmer uses a screen designer to set up the contents of a window, selecting control objects (pushbuttons, list boxes, and so on) from an onscreen toolbox and placing them in your design. The programmer then writes procedures for the objects using a modern version of BASIC.

Visual BASIC for Applications (VBA) A version of the Visual BASIC programming language included with Microsoft Windows applications, such as Microsoft Excel; also called Visual BASIC Programming System, Applications Edition. Visual BASIC for Applications is used to create procedures as simple as basic macros and as complex as custom application programs, complete with dialog boxes, menus, pushbuttons, and unique commands.

VL-Bus See *VESA local bus*.

VLSI See *very large scale integration*.

voice actuation Computer recognition and acceptance of spoken commands as instructions to be processed. See *speech recognition*.

voice-capable modem A modem that, like a fax switch, can distinguish fax transmissions, data transmissions, and voice telephone calls and then route each to the proper device. Voice-capable modems can serve as voice mail systems for small offices.

voice coil actuator See *servo-voice coil actuator*.

voice mail In office automation, a communications system in which voice messages are transformed into digital form and stored on a network. When the person to whom the message is directed logs on to the system and discovers that a message is